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The effect of combined therapy using artemisinin and red fruit oil towards the erythrocyte Mmlondyaldehyde level in mice balb/c infected with *Plasmodium berghei*

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Background: Reactive Oxygen Species (ROS) are involved in the host antimalarial response and pathological process during malarial infection. Besides antimalarial drug therapy, antioxidant like red fruit oil is needed as adjuvant therapy to prevent complication. Experimental studies were carried out to determine the effect of the combination of artemisinin and red fruit oil to erythrocyte MDA level in BALB/c mice infected with *Plasmodium berghei*.

Methods: This study was experimental study using BALB/c mice which infected with *Plasmodium berghei*. There were 3 groups, control group, artemisinin group and combined group

Results: The result of data analysis showed that at the 3rd day, the erythrocytes MDA level significantly decreased ($p < 0.05$) in the group of mice with artemisinin therapy ($p = 0.020$) and the group of mice with combination therapy at the 1st, 2nd, and 3rd doses (with each p is 0.005; 0.005; 0.001) compared with the group of malarial mice. At the 5th day, the erythrocytes MDA level significantly decreased in the group of mice with artemisinin therapy ($p = 0.000$) and the group of mice with combination therapy at the 1st, 2nd, and 3rd doses (with each p is 0.000) compared with the group of malarial mice. At the 5th day, the erythrocytes MDA level also significantly decreased in the group of mice with combination therapy at the 1st, 2nd, and 3rd doses (with each p is 0.015; 0.031; and 0.016) compared with the group of artemisinin mice

Conclusion: It can be concluded that the combination of artemisinin and red fruit oil decreases erythrocytes MDA level in mice infected with malaria more than only artemisinin therapy.

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Seroepidemiology of *Toxoplasma gondii* in ante-natal women attending Kenyatta National Hospital, Kenya

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Background: *Toxoplasma gondii* is an obligate intracellular protozoan, with a worldwide distribution. The definitive host of the parasite are feline mammals e.g. the domestic cat. Intermediate hosts include animals and man. Chronically infected pregnant women who develop defects in cell-mediated immunity risk reactivation of infection. In HIV infected patients risk of reactivation of *T. gondii* occurs with CD4 counts of less than 100 cells/ μ L.

Prevalence of serologic evidence of *T. gondii* infection varies depending on geographic locale and population groups.

Methods: The objective of the study was to determine the seroprevalence of *T. gondii* infections among the pregnant mothers attending Kenyatta National Hospital (KNH). Cross-sectional descriptive study.

Sample population was randomly selected and sample size was derived using Epi calculator, Epi version 2.2 with an expected prevalence of 14%. Blood was collected from the ante-cubital veins and testing for the *T. gondii* tested as per the HUMAN ELISA kit.

Results: Participants who were positive only for IgM were considered to be having acute infection, while those positive for IgG only were considered to be having chronic infection. Those positive for both IgM and IgG were considered to have false acute infection. Those negative for both IgM and IgG were considered to be uninfected. Upto 27% of the pregnant women had acute infection, 22% chronic and 37% were not exposed and 12% were false positive. There was significant negative association of IgG and past abortions ($P = 0.037$), (OR 0.5(0.2–1.0)) and IgM with all gestations ($P = 0.039$) but no significant association of seroprevalence of anti-*T. gondii* antibodies with socio-demographic parameters ($P > 0.05$). Reactivation of *T. gondii* in HIV infected women could not be established due to small number obtained.

Conclusion: This study revealed a high percentage of pregnant women with anti-*T. gondii* either acute (23%) or chronic (30%) seropositivity. This compares with other studies done previously. *T. gondii* infection in pregnancy may be an important public health problem in Kenya. The morbidity and mortality attributable to *T. gondii* in newborns warrants further studies, over a longer period, with a view to strengthening preventive measures.

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